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July 18, 2019

## VIA ECFS

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: GCI Communication Corp.  
Notice of Ex Parte Communication – *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*  
GN Docket No. 18-122

Dear Ms. Dortch:

On July 16, 2019, Kara Azocar, Regulatory Counsel, Federal Affairs, of GCI Communication Corp. (“GCI”), along with Jessica Gyllstrom of Telecommunications Law Professionals PLLC, met with representatives of the International Bureau, the Wireless Telecommunications Bureau and the Office of Engineering and Technology, as listed in Attachment A (“FCC Staff”). GCI’s presentation during the meeting was consistent with its previous statements on the record in this docket and in related proceedings.

Specifically, GCI outlined several critical considerations regarding the current and future uses of the C-Band in Alaska, and urged the FCC to account for such considerations in connection with any modification of the current C-Band (3.7-4.2 GHz Band), including: (1) excluding Alaska from any reallocation of the C-Band; (2) providing Alaska operators with continued access to their current capacity for the foreseeable future; (3) protecting Alaskan operators’ C-Band operations from harmful interference caused by new services permitted in the band (if applicable); and (4) ensuring adequate reimbursement to Alaskan operators in the event that any changes in the C-Band landscape result in additional cost or other impacts to these operations. These considerations are discussed further herein.

During the meeting, GCI urged the Commission to carefully consider the above requests in light of the method and criticality of GCI’s services via the C-Band. GCI provides services that are currently unable to be provided via any other distribution method in Alaska; some of which are similar in kind to services provided in the lower 48 (*i.e.*, video programming delivery), and some of which are unique to Alaska (*i.e.*, critical telecommunications services).



## Overview of GCI's Critical Operations Over the C-Band and Unique Alaska Considerations

As Alaska's largest communication provider, GCI must utilize a variety of technologies to overcome the natural challenges of operating in Alaska, including its remoteness, unique federal land restrictions, limited backhaul availability, and extreme weather conditions.<sup>1</sup> As a result, GCI has invested well over \$100 million in developing and deploying the C-Band over the past 35 years in order to provide fixed satellite service ("FSS") long-distance voice and data communications (including long-haul voice trunks, wireless backhaul for voice and data, Internet access, and private line data circuits) and improve service availability for rural Alaskan customers that oftentimes do not have any other communications option. While GCI also provides video programming services over the C-Band via a small percentage of its earth stations, the vast majority of its C-Band earth stations are dedicated to providing critical communications services to the most remote communities in the country. The provision of these services via the C-Band distribution method is unique to Alaska, and necessary to due the lack of availability of other distribution methods.

GCI's C-Band operations involve over 130 antennas, ranging from sites in large cities like Anchorage, to small, remote islands such as Atka and Nikolski. 40 of these antennas are being used for receive-only ("Rx-only") for video programming delivery, while over 90 of these antennas are used for transmit/receive to provide various telecommunication services. There are 11 discrete locations at which GCI has C-Band Rx-only earth station antennas, and 88 discrete locations for transmit/receive earth stations. GCI currently operates on three C-Band satellites, and utilizes a different number of transponders for each spacecraft. For instance, GCI uses 21 of the 24 transponders that are available on one of these satellites. In addition, GCI also relies on in-orbit protection services from an additional satellite.

GCI has a long history of innovative uses of the C-Band and relies on access to the full 500 MHz to provide service to its customers. Many of GCI's C-Band sites serve some of the most rural and remote Americans, who must rely on satellite technology for the provision of basic telephone service as well as critical and important communications. The interruption of these services could result in life-threatening situations. In the meeting, GCI highlighted some of its demonstrated uses, previously documented in detail in the record, including:

- Offering critical long-distance services, such as measured toll service to remote villages that is oftentimes the only communications link to the "outside world" and special access services to businesses, native corporations, and local, state and federal governments.
- Providing the FAA with real-time weather-camera information using the GCI satellite network for middle-mile backhaul. Based on data compiled by the FAA, this program has

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<sup>1</sup> See *Attachment B* for a comprehensive map of GCI's broadband infrastructure, including C-Band and Fiber deployments.



reduced weather-related aviation incidents in Alaska by 85 percent, and has reduced how often pilots must turn a plane around due to weather by 66 percent.<sup>2</sup>

- Meeting its obligations under the Alaska Plan through the use of this spectrum to deliver middle-mile capacity with the last-mile LTE service – a critical initiative to provide needed services to under- and otherwise un-served areas.
- Supporting the delivery of telehealth services such as teleradiology, remote patient monitoring, medical network solutions, and live video-conferencing to customers in Alaska;<sup>3</sup> and
- Offering broadband access, video-conferencing and state of the art digital tools to schools and libraries in rural and underserved regions of the United States, which have become an essential part of educating students in rural Alaska, allowing these children to gain an education that would otherwise not be made available.<sup>4</sup>

GCI's previous filings in this docket and related proceedings include additional details on these services and their impact to Alaska, and GCI incorporates those filings by reference here.<sup>5</sup>

GCI's creative and innovative uses of the C-Band are a direct result of the challenges associated with serving Alaska's remote and rural areas using alternative mechanisms. As GCI explained during the meeting, at this time, it is not aware of a suitable replacement for the C-Band. First, the currently available Ku- and Ka-band options are not realistic alternative options due to (a) reduced link availability resulting from more challenging propagation conditions and higher link margins required to accommodate Ku- or Ka-band fading;<sup>6</sup> (b) the prohibitively high cost associated with replacing or upgrading ground segment

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<sup>2</sup> GCI, News Release, *Weather Camera Program Protects Pilots, Saves Lives in Alaska* (Apr. 19, 2017) <https://www.gci.com/about/newsreleases/weather-camera-program>.

<sup>3</sup> See GCI Telehealth, <http://www.connectmd.com/> (last visited July 17, 2019).

<sup>4</sup> See GCI Education Solutions, <https://www.gci.com/business/solutions/education> (last visited July 17, 2019).

<sup>5</sup> See, e.g., Reply Comments of GCI Communication Corp., GN Docket No. 18-122 et al. (filed Nov. 27, 2018) ("GCI 2018 C-Band Reply Comments"); Comments of GCI Communication Corp., GN Docket No. 18-122 et al. (filed Oct. 29, 2018) ("GCI 2018 C-Band Comments"); Comments of GCI Communication Corp., GN Docket No. 18-122 (filed May 31, 2018) ("GCI 2018 Sharing Comments"); Reply Comments of General Communication, Inc., GN Docket No. 17-183 (filed Nov. 15, 2017) ("GCI 2017 Mid-Band Reply Comments"); Comments of General Communication, Inc., GN Docket No. 17-183 (filed Oct. 2, 2017) ("GCI 2017 Mid-Band Comments"); Letter from Jessica Gyllstrom, Counsel to General Communication, Inc., to Marlene H. Dortch, Secretary, FCC, in RM-11791 (Sept. 25, 2017); Letter from Michael Lazarus, Counsel to General Communication, Inc., to Marlene H. Dortch, Secretary, FCC, in GN Docket No. 17-183 et al. (Sept. 20, 2017); Comments of General Communication, Inc., RM-11791 (Aug. 7, 2017).

<sup>6</sup> For instance, weather characteristics such as rain, snow, or fog may cause signal fade on these satellite bands. This is especially concerning in Alaska, where snowfall could occur anytime from September to June, and its natural attributes make it even more difficult to rely on other satellite bands.

equipment; and, most notably (c) the lack of available Ku- or Ka-band satellites having satisfactory coverage over the state of Alaska – in other words, there is not enough capacity or coverage of Ku-band satellites to move all of the C-Band services and there is minimal, if any, Ka-Band coverage in Alaska. For these reasons, alternative satellite bands are not currently a viable option for migrating GCI's C-Band operations.

Second, switching to fiber is also not a suitable alternative for its services.<sup>7</sup> Much of the land in rural Alaska is protected by numerous federal and state laws that limit human activity and thus preclude fiber builds.<sup>8</sup> In addition, the distance between many of GCI's C-Band earth stations and fiber headends is vast, and long fiber runs in Alaska are not feasible solutions.<sup>9</sup> As GCI explained, in many areas, such fiber would run over the Arctic tundra and would need to be safeguarded against damage caused by the complex and changing structure of permafrost, which can range in thickness from a single meter to many hundreds of meters. In addition, uneven freezing and thawing at or near the surface can result in dramatic changes to landforms, such as ice wedges (*i.e.*, growing cracks in the ground) and pingos (*i.e.*, small hills that arise quickly due to subsurface pressures), which can damage buried fiber optic cable.<sup>10</sup> In other areas, fiber would be required to run across hundreds of miles of open arctic ocean and would need to be safeguarded against additional elements, including ice and rough sea floors.<sup>11</sup>

Moreover, a business case for fiber is challenging, if not impossible, due to the costs associated not just with deployment and repairs in difficult to access areas, but with the hardening required to make fiber a reliable telecommunications option in such areas.<sup>12</sup> Indeed, that is a large reason why GCI utilizes geostationary satellites that do an extremely effective job covering large geographic areas. In short, if it

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<sup>7</sup> See, e.g., GCI 2018 C-Band Reply Comments at 8-19; GCI 2017 Mid-Band Reply Comments at 14-15; see also Amended Petition of GCI for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations Between 6425 and 7125 MHz, WT Docket No. 16-209, at p. 6 (filed May 3, 2016) ("GCI Amended Petition").

<sup>8</sup> Including the Alaska National Interest Lands Conservation Act, the National Wildlife Refuge System Administration Act, the National Wildlife Refuge System Improvement Act of 1997, the Wilderness Act, the Wild and Scenic Rivers Act, the Marine Mammal Protection Act, and the Arctic Refuge Comprehensive Conservation Plan. See GCI Amended Petition at 6.

<sup>9</sup> See Attachment B.

<sup>10</sup> U.S. Fish & Wildlife Serv., *Ice Wedges, Polygons, and Pingos*, <https://www.fws.gov/refuge/arctic/permcycle.html> (last visited July 17, 2019) (describing the process by which the permafrost cycles through changes); Nat'l Snow & Ice Data Ctr., *All About Frozen Ground – How Does Frozen Ground Affect Land?* [https://nsidc.org/cryosphere/frozenground/how\\_fg\\_affects\\_land.html](https://nsidc.org/cryosphere/frozenground/how_fg_affects_land.html) (last visited July 17, 2019) (describing how freezing and thawing in the Arctic can change the shape of the land).

<sup>11</sup> Submarine fiber, particularly in Alaska's cold and icy waters carries inherent risk. The more ice that accumulates, the higher the probability of cuts to the fiber, resulting in decreased reliability.

<sup>12</sup> Other unique challenges concerning fiber deployment in Alaska include consideration of bird and animal migration and birthing schedules, as well as shorter construction periods due to severe weather and lack of light during winter months.



were feasible to install fiber to serve these rural Alaskan communities, then Alaskan carriers would have already done so.

### **Protection of GCI's Operations**

The critical services that GCI provides over the C-Band, coupled with the unique Alaskan considerations when it comes to serving rural and remote customers, all lend support to ensuring continuity of C-Band operations in Alaska. In light of this proceeding, GCI continues to seek out whether any viable alternatives to the C-Band – which are not in existence today – may arise in the future. However, GCI and other providers need certainty that they can continue to operate unless and until a viable alternative is available. To that end, during the meeting, GCI outlined four fundamental aspects that must be incorporated into any future plan for the C-Band:

- (1) The state of Alaska must be excluded from any reallocation of the C-Band. As GCI has explained throughout this docket and in related proceedings, Alaska has unique needs, one of which is the need for extensive C-Band capacity and coverage to meet the communications needs of the most rural and remote areas of the state (and the country for that matter). As discussed above, and further in GCI's related filings, these are areas that due to weather, terrain, and/or government land use policies, are unrealistic to serve with any other type of communications solution – whether it be fiber optic cable, submarine cable, other satellite bands, or microwave backhaul. During the meeting, GCI noted that certain industry proposals on the record recognized the need to exclude Alaska from any reallocation going forward, and that there was no opposition to this component of those proposals.<sup>13</sup>
- (2) Alaskan operators must have continued access to their full existing capacity (full 500 MHz) for the foreseeable future. For instance, even if Alaska is excluded from a reallocation plan going forward, a commitment should be made by satellite operators to continue to provide full C-Band satellite coverage to Alaska now and in the future. Future spacecraft must be built with the necessary equipment to allow GCI to provide all of its C-Band services. As noted above, GCI currently utilizes 21 of the 24 transponders on a single spacecraft, which results in GCI operating on over 400 MHz of the C-Band in that instance. GCI's operations would severely suffer if its network was forced to be repacked into a smaller amount of megahertz.

Alaska C-Band operations are ever-evolving, and as a result require flexibility – both on an operational level and a licensing level. For instance, GCI's ability to effectively utilize the C-Band spectrum is due in large part to the well-established flexible operating rules under the full-band, full-arc policy that allow it to efficiently shift frequencies and satellites in the event of a transponder or satellite failure, changing customer requirements, or market competition

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<sup>13</sup> See e.g., Comments of the C-Band Alliance, GN Docket No. 18-122 et al., at n. 50 (filed Oct. 29, 2018) (noting that Alaska would be carved out from its plan to repurpose a portion of the C-Band); Letter from Ross Lieberman et al., SVP, ACA Connects, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, at n. 1 (filed July 2, 2019) (stating that the ACA/CCA/Charter proposal “recognizes that fiber delivery is not a possible solution for remote areas of Alaska . . . [and] [s]uitable alternative solutions must be made available for incumbent C-Band operators who provide critical services throughout the State.”).

(resulting in capacity cost reductions).<sup>14</sup> In addition to relying on primary, full-time satellites, GCI also requires the ability to operate on other western arc satellites with very little notice (*i.e.*, less than four hours) in order to provide restoration of terrestrial networks that service rural Alaska. GCI has contracted with satellite providers to obtain “in-orbit protection,” which allows GCI to access additional capacity at other orbital locations (with priority assignment) in the event that the primary spacecraft experiences a catastrophic failure. Removing this flexibility would make it extremely difficult, if not impossible, for GCI to minimize service interruptions to its rural customers, and such consequences should be avoided by maintaining this policy going forward.

Flexibility also includes the continued ability for incumbents to modify or acquire new C-Band licenses in Alaska. The current filing freeze of certain C-Band applications has made it increasingly difficult for GCI to conduct its day-to-day business. Simply put, it is necessary to make modifications to existing operations or otherwise add new operations to reflect the evolving nature of the satellite industry, such as in situations where satellite spacecraft reach end of life and modifications to earth stations are required in order to operate on new replacement spacecraft.

- (3) Alaska operators’ current and future C-Band operations must be protected from harmful interference caused by any new entrants permitted into the band. During the meeting, GCI explained that in most cases, its C-Band operations are the only way to provide critical communications service to a remote or rural area. Regardless of the approach adopted by the Commission, it is imperative that the FCC also adopt technical rules based on detailed testing, reporting and analysis that satisfactorily demonstrate full protection to incumbent earth station operations from harmful interference.<sup>15</sup>
- (4) If Alaskan operators are required to relocate or alter C-Band services or operations, as a direct or indirect result of the action taken by the FCC in this proceeding, full reimbursement must be available for all costs and related impacts to any change or relocation of operations. As noted above, GCI has heavily invested in the C-Band, and as an incumbent operator, it should be made whole if any modifications need to be made to its operations. Such compensation should include, but not be limited to, equipment and installation costs; research and development for potential alternatives; increased operating expenses as a result of more

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<sup>14</sup> Indeed, GCI routinely adjusts the frequencies and other parameters of satellite carriers in its network to facilitate “adds, moves, and changes” to GCI’s services.

<sup>15</sup> Exclusion zones would require significant separation distances from terrestrial and mobile transmitters – which wouldn’t work well in Alaska as such exclusion zones would very likely cover the large population centers where GCI currently provides a variety of critical services via C-Band, thus eliminating the area in which any new terrestrial wireless services may be desirable. GCI believes that the most effective way to protect its operations from harmful interference is to exclude Alaska from a C-Band reallocation plan.





remote C-Band equipment;<sup>16</sup> replacement earth station antennas; associated installation and structural support; and any other cost that is a direct or indirect result of action taken by the FCC in this proceeding. Moreover, additional costs may arise if the FCC elects to transition C-Band services entirely onto alternative transmission options, including actual technology transition costs and costs associated with deploying new technologies; increased costs due to limited available C-Band capacity; and costs associated with acquiring redundant services to act as a back-up to ensure comparable reliability to the C-Band.<sup>17</sup>

In addition to the “business as usual” costs associated with clearing the band, there is also a significant business impact that should be addressed through compensation. Namely, removing resources from new revenue generating projects and consideration for compensation associated with disrupting customers and resources. Without adequate compensation reflecting the actual costs as well as decades-old investments, FSS earth station operators may not be able to continue to provide important and critical services to their customers and the community at large.

Regardless of the ultimate direction the FCC takes with respect to the future of the C-Band, during the meeting, GCI emphasized that the FCC’s should not lose sight of the need to ensure adequate protections, flexibility, and funding to allow critical incumbent services to continue to operate and develop.

Please direct any questions to the undersigned.

Sincerely,

/s/Jessica D. Gyllstrom

Jessica DeSimone Gyllstrom  
of TELECOMMUNICATIONS LAW PROFESSIONALS PLLC

Attachments

cc (via email): FCC Staff Listed in Attachment A

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<sup>16</sup> Indeed, if the FCC adopts its proposal to move C-Band operations to more rural and remote areas, rather than urban areas, the FCC would also need to account for – and reimburse – the increased operating costs associated with keeping satellites in operation for those limited areas.

<sup>17</sup> For example, if video programming is delivered exclusively via fiber, regardless of whether Alaska is carved out of any reallocation, Alaska video programmers will be required to receive programming via fiber and uplink it via C-Band to communities that are not connected via fiber. *See* ACA/CCA/Charter Proposal at n. 1.

## **ATTACHMENT A**

### **FCC Staff**

Jennifer Gilsenan, International Bureau  
Jose Albuquerque, International Bureau  
Jim Schlichting, International Bureau  
\*Kal Krautkramer, International Bureau  
\*Jeffrey Tignor, Wireless Telecommunications Bureau  
\*Peter Daronco, Wireless Telecommunications Bureau  
\*Brian Wondrack, Wireless Telecommunications Bureau  
Ira Koltz, Office of Engineering and Technology  
Michael Ha, Office of Engineering and Technology

\* participated via teleconference



**ATTACHMENT B**

**GCI Broadband Infrastructure Map**

